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ABSTRACT

Research objectives were to present and analyze a causal model of educational attainment and to include with parental socioeconomic status the number of siblings as an intervening social origin variable impacting on attitudes and attainment. Data were obtained from a three-wave longitudinal study (1966, 1968, and 1972) of 221 white nonmetropolitan male youth (Alabama, Georgia, and Texas). The variables measured were parental socioeconomic status, number of siblings, significant other influence, work value, level of occupational aspirations, level of educational aspiration, and educational attainment. Findings indicated: the application of a status attainment model to a nonmetropolitan Southern data set yielded results similar to those reported in the original models developed by Blau-Duncan and Sewell in that the formation of adolescent attitudes were important mediating influences immediately antecedent to adult status attainment; 88% of the effects of socioeconomic status on educational attainment were found to be mediated by the five intervening influences (level of occupational and educational aspiration appeared to be the most important); the formation of attitudes was found to be associated with the antecedent influences of social origins and significant other encouragement; sibling number also played a role in development attitudes. (JC)

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SOCIAL ORIGIN AND ATTITUDINAL EFFECTS ON EDUCATIONAL STATUS ATTAINMENT[1]

by

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Introduction

In the last decade, a proliferation of research has accumulated regarding educational attainment processes (Glenn, et al., 1970; Kuvlesky and Reynolds, 1970). Many of these studies examine the influences of familial factors - or what has been called more recently "social origin" effects - on educational aspirations and attainment of young adults. This paper is concerned likewise with examining social origin influences as they relate to parental socioeconomic status. In addition, a structural variable, number of siblings, will be included in our analysis. Although the effect of number of siblings upon aspirations and attainment has been investigated elsewhere (Lipset and Bendix, 1959; and Rosen, 1969),[2] it has received scant attention in the causal modeling of status attainment processes. An indication of researchers' failure to incorporate this variable is provided by Jencks, et al., (1972) and their omission of number of siblings in assessing educational inequality. The closest approximation to their handling this variable appears in the appendices of Inequality and is more appropriately concerned with the birth order of first and second born males.

One of the earlier analyses incorporating number of siblings as a variable in a causal model is presented by Blau and Duncan (1967). Extending their original model, which is concerned with the transmission of status or the degree to which the dependence of man's educational and occupational attainment is explained by his social origins, these researchers introduce number of siblings as an intervening influence upon attainment statuses. Unfortunately, Blau and Duncan combine number of siblings with birth order to form what they call "the sibling variable." As a result of this variable combination, they "cannot give single numerical values to the quasi-paths leading from or to the sibling variable, because the latter is not a metrical variable but a manifold classification lacking even a single principle of ordering (Blau and Duncan, 1967:311)." Ultimately, their analysis of the effect of the sibling variable is carried outside of their causal system.[3]

In sum, the objectives of this paper can be enumerated as follows: (1) to present and analyze a causal model of educational attainment and (2) to include with parental socioeconomic status number of siblings as an intervening social origin variable impacting upon attitudes and attainment.

A Model of Educational Attainment

Unlike the original Blau-Duncan Model which stresses a one step status transmission process, the model used here approaches the Wisconsin Model,

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which proposes a three step transmission process (Sewell, Haller and Portes, 1969; Sewell, Haller and Ohlendorf, 1970; Sewell and Hauser, 1972; Haller and Portes, 1973). Elaborating on the Blau-Duncan Model, this model introduces social psychological and significant-other influence (SOI) variables into the status attainment process. The Wisconsin Model assumes that the exogenous variables of parental status (SES)[4] and mental ability (I.Q.) influence school performance. These variables, in turn, affect higher educational attainment through significant-other encouragement and levels of occupational and educational aspirations.

The educational attainment model to be analyzed in the present research appears as Figure 1. The model was derived by combining selected aspects of the extended Blau-Duncan and Wisconsin Models which are supported by current panel data. The causal ordering of the model's variables assumes that parental SES affects number of siblings. These social origin variables then, in turn, influence significant-other individuals, who through their encouragement may exert influence upon ego's value priorities and levels of occupational and educational aspirations. The behavioral manifestation of social origin and significant-other influences and ego's attitudes in the status attainment process is level of educational attainment.

In their comparison of the Blau-Duncan Model and the Wisconsin Model, Haller and Portes (1973) find that of the total variation in son's educational attainment, the former model explains 26% while the more complex Wisconsin Model explains 55%. In other research using causal modeling, similar results likewise show that parental SES has a significant, positive association with filial occupational and educational aspirations and attainment (Sewell and Shah, 1968; Sewell, Haller and Ohlendorf, 1970; Duncan, Featherman, and Duncan, 1972; Alexander and Eckland, 1974; and Cosby and Picou, 1975).[5] Among research not using causal modeling, Brookover, et al. (1967) find in their research of 377 white male students in three high schools of a midwestern city that SES also has a significant, positive correlation with educational aspirations, plans and attainment. Likewise, Brodie and Steelman (1968) conclude that the higher the parental SES, the higher or stronger the educational desires.

Coupled with the general finding that parental SES is inversely associated with family size (Rainwater and Weinstein, 1970; Cavan, 1964; and Lipset and Bendix, 1959),[6] the number of siblings ego has affects his future attainment or success chances. Controlling for SES, Blau and Duncan (1967) find that boys in small families advance further in school than boys in large families. They conclude that filial status attainment is doubly handicapped in large families. The first handicap is that lower SES parents with no tradition of going to college or even graduating from high school have meager financial resources. The second handicap thus becomes that in large lower SES families these resources must be divided among more siblings than in smaller families at this SES level. Moreover, Lipset and Bendix (1959) cite several studies of social mobility in six Western European countries that indicate upwardly mobile and better educated children come from small families. Rosen (1969) further adds from his study of 427 pairs of mothers and their sons in four northern states that as family sizes increase, achievement motivation scores of boys from lower socioeconomic homes decline.

Another intervening or mediating factor between parental SES and filial aspirations and educational attainment is SOI. Sewell, Haller and Portes (1969) report a zero-order correlation of .59 between the expectation of a panel of SOI (parents, teachers and peers) and the educational aspirations of Wisconsin farm youth in their senior year of high school. They further show that the influence of parental SES is completely mediated by the significant other expectations and encouragement.[7] Woelfel and Haller (1971) in their study of 100 high school seniors from a small Wisconsin city find that of three modes of influence - interpersonal influence, self-reflective activity and related attitudes - each exercise "strong causal influence over the formation of attitudes, and that once formed, these attitudes exert independent causal influence over behavior." Likewise, Picou et al. (1974) conclude that for urban white high school seniors in Louisiana SOI manifested the largest effect on educational plans.

Of the antecedent and intervening variables utilized in status attainment research, adolescent aspirations generally yield higher correlations than the significant influences of parental SES, sibling number, SOI and academic performance. Researchers employing panel data from Sewell's Wisconsin study, Project Talent and the Explorations in Equality of Opportunity Study, report moderate to strong correlations between adolescent aspirations and later educational status attainment (Sewell, Haller, and Portes, 1969; Sewell, Haller and Ohlendorf, 1970; Porter, 1974; Alexander and Eckland, 1974). For example, Sewell, Haller and Ohlendorf (1970) find correlations between levels of educational aspirations measured in high school and subsequent adult educational attainment ranging in magnitude from .65 to .75 for six residential categories. Additional support for the strong association between attitudes and attainment is provided by Sewell and Picou (1975). These researchers obtain for both races and sexes sampled from six southern states significant influences of levels of occupational and educational aspirations (with the exception of level of occupational aspiration for white females) on education attainment. Sewell (1971) in his presidential address to the American Sociological Association summarizes the importance of this attitude-attainment relationship. In essence, he posits that such psychological variables as aspirations have a substantial impact upon attainment independent of other influences and they also act on mediating influences that aid in explaining how social origins impact upon attainment.

Operationalization of Model Variables

(1) Parental Socioeconomic Status (SES). As stated earlier, two sources of social origin influences are measured. The first source is parental SES, which is a composite index derived as the average of Z-scores of the family breadwinner's occupation, father's education, and mother's education. Breadwinner's occupation (BOC) is operationalized by assigning Duncan's (1961) socioeconomic index (SEI) scores to responses to the question, "What is the major job held by the main breadwinner (money earner) of you home?" Father's (FED) and mother's (MED) education is determined by having asked in 1966 two similar questions, "What was the highest school grade completed by your father (second question for mother)?" The responses were originally structured into eight levels ranging from "did not go to school" to "college graduate." To accomodate statistical comparability, the levels are recoded to agree with the six levels listed below for level of educational aspiration.

(2) Number of Siblings (SIB). This second social origin variable is operationalized by asking a panel member in 1966, "How many living brothers and sisters do you have?" The responses are coded as given from 0 to 7. A sibling number of eight or larger is also coded as 7.

(3) Significant Other Influence (SOI). SOI is a composite measure of 1966 occupational aspirations (OCAS6) and perceived encouragement from parents (PAR), friends (FRD), counselors (COU), teachers (TEA) and other relatives (REL). In measuring OCAS6, panel members were asked, "If you were completely free to choose any job, what would you desire most as a lifetime job?" Responses are assigned Duncan's (1961) SEI score. Those scores above the median score (54) are given the value "2" while those equal to or less than the median are assigned "1". For each of the five sources of potential encouragement, the respondent was asked how helpful these people have been in helping him decide what job he would most like to have. Responses of "no help" and "little help" are recoded "1" while those of "some help" and "very helpful" are recoded "2". Each encouragement source is then multiplied by 10 and added to the OCAS6 score of "1" or "2". The resulting scores of "11,12,21" are recoded "1" for low encouragement and "22" is assigned "2" for high encouragement for high occupation aspirations. The SOI index score is calculated by adding these scores. The SOI index range is from "5 to 10" or from low to high.

(4) Work Value (WKVAL). Three attitudinal measures are used. The first of these measures concerns occupational (OCVAL) and educational (EDVAL) value priorities. The respondents were asked in 1966 to rank from a list of seven items the order of importance things that most young people look forward to. One represented the most important and seven the least important.[8] The WKVAL score is determined by averaging the rankings of OCVAL and EDVAL. The range of scores for WKVAL is 1.5 to 6.5.

(5) Level of Occupational Aspirations (LOA8). The second attitudinal measure is LOA8, which is a composite measure obtained from two questions asked during the respondent's senior year of high school (1968). Occupational aspiration (OCAS8) was determined by response to the identical question asked for OCAS6. Occupational expectation (OCEX8) was obtained by asking, "Sometimes we are not able to do what we want most. What kind of job do you really expect to have most of your life?" LOA8 is calculated by taking the unweighted average of Duncan's SEI scores for OCAS8 and OCEX8.

(6) Level of Educational Aspiration (LEA8). The remaining attitudinal measure, LEA8, is a composite measure derived from the following questions asked during a panel member's senior year of high school. Educational aspiration (EDAS8) was determined by asking: "If you could have as much education as you desire, which of the following would you do?" Six fixed choice responses were offered: some high school; high school; trade, business, commercial or vocational-technical programs; junior college; graduate from four year college; and graduate or professional degree. Educational expectation (EDEX8) was determined with the same fixed choice responses as EDAS8 and by asking: "What do you really expect to do about your education?" Subsequently, LEA8 is operationlized by computing the unweighted average of EDAS8 and EDEX8.[9]

(7) Educational Attainment (EDAT). A behavioral measure of the panel members is provided by the dependent variable EDAT. In the 1972 wave a panel member's

EDAT was determined by the question: "What is the highest degree or educational program you have completed?" Responses are recoded to correspond to the six categories for LEA8. If a respondent was currently pursuing a degree or participating in some type of educational program, for example vocational education, that level of education was assumed to have been a achieved.

Missing Data for Variables

Whenever any of the responses for a model variable or index component is missing, random values are substituted so as to avoid the loss of valid information which generally would occur in a deletion procedure. Utilizing the NORM routine, a normal distribution was generated with the same mean and standard deviation as that of the known data (Barr and Goodnight, 1972). These randomly generated values which are within the range of legitmate responses available to respondents are then substituted for missing values. The only exceptions to this procedure are LOA8 and LEA8. If either component measure is missing for a particular aspiration attitude, the present component measure becomes the index score. For example, if OCAS8 is missing, then the SEI score for OCEX8 also becomes the score for LOA8. If both OCAS8 and OCEX8 are missing, then the random-number procedure is used to generate values for each of the components and their average is taken for LOA8. This is also the case for LEA8 and its components. Table 1 shows the missing data for the disaggregated variables and their means and standard deviations.

Panel

The data were obtained from a three wave longitudinal study of white, non-metropolitan male youth in Alabama, Georgia and Texas.[10] The first wave conducted in 1966 involved interviewing sophomores in purposively selected high schools. The second wave was conducted in 1968 among high school seniors. As in the first wave, data were collected by a group administered questionnaire and also by personal interviews and/or a mailed questionnaire administered to those students who had dropped out of school or who had moved from the study schools. The last wave of data was collected in 1972 when the original panel respondents were four years beyond expected high school completion. The principle causes of panel attrition for the third wave was out-of-state migration and military service. The resulting sample size of the panel for the three waves was 221.

Findings

Zero-order correlations, means, standard deviations, and coefficients of determination (R^2) for the seven model variables are presented in Table 2. The correlation coefficients show the strength of the relationships among the seven variables while also providing a basis for evaluating the causal paths of the study model. As seen in examining the coefficients, significant correlations are observed among all variables with the exception of WKVAL. It has significant correlations only with SES and SOI. The strongest

associations are among LOA8, LEA8, and EDAT. Likewise, the largest amounts of total explained variations (R^2) are for these variables.

The model explains approximately 34% of the variation in educational attainment. As shown in the path diagram in Figure 1, the main, direct influences on attainment are from LEA8 and LOA8. Since other direct paths to EDAT are neglible, this suggests that these attitudes serve as important mediating influences on attainment. That is, the effects of prior variables in the model are transmitted primarily and indirectly through these aspirational attitudes. Although to a lesser degree, these findings support those from applications of the Wisconsin model (Sewell, Haller, Portes, 1969; Sewell, Haller, Ohlendorf, 1970; Porter, 1974: Alexander and Eckland, 1974) and from other research (Cosby and Picou, 1973 and 1975; Brookover, et al., 1967). The importance of this mediating influence will be elaborated later.

A relevant question at this point is what variables influence the formation of these aspirational attitudes? The model accounts for 28% and 34% of the total variation respectively for LOA8 and LEA8. Significant direct paths are observed from SOI, SIB and SES to LOA8 and LEA8. Although there is little effect of SIB on SOI, significant, indirect influences from SES are mediated by these variables on levels of aspiration. In other words, as parental SES increases, SIB decreases (see footnote 8) and SOI increases. These variables processes, in turn, influence high LOA8 and LEA8. It should be noted that part of the influence of SOI on LOA8 may be a result of autocorrelation between the OCAS6 component of SOI and OCAS8 (and OCEX8 for that matter) of LOA8. A correction for autocorrelation would lower the path coefficient for SOI on LOA8.

As indicated by its zero-order correlations, and subsequently shown by its path coefficients WKVAL has very little effect on LOA8, LEA8 or EDAT. Furthermore, there does not appear to be any significant prior influences on WKVAL, although parental SES operating through SOI provides some noticeable source of influence. One possible explanation of the WKVAL finding is the pervasiveness of common rankings for OCVAL and EDVAL. With a standard deviation of 1.1 and mean of 2.6, panel members show general agreement regarding WKVAL and its component rankings. However, one would expect those with high WKVAL to have also high LOA8 and LEA8. This is apparently not the case. Rather, the discrepency among these attitudes could be attributable to differences between the value rankings of panel members as sophomores and their more crystalized aspirational attitudes as seniors in high school.

Returning to the discussion concerning LOA8 and LEA8 mediating the transmission of prior effects on EDAT, Table 3 provides as an example the decomposition of SES effects on EDAT. The top portion of the table is a breakdown of all the indirect effects of SES through intervening variables in the model. The bottom portion of the table shows the direct and indirect contributions toward the zero order correlation. Approximately, 88% of the total effect of SES on EDAT is indirect. Of this 88%, 82% is accounted by LOA8 (31%) and LEA8 (51%). SIB, SOI and WKVAL account for only 6% of the indirect effects. The direct influence of SES on EDAT is approximately 12%.

Consequently, the transmission of parental SES to filial educational attainment is highly dependent upon the formulated levels of occupational and educational aspirations. Although not conducted here, further analyses using this procedure of decomposing effects would determine primary sources of influence upon LOA8 and LEA8 attitudes.

Summary

Perhaps the most noteworthy finding from this research was the general observation that the application of a status attainment model to a non-metropolitan, Southern data set resulted in a similar complex of influences to those reported in the original status attainment models developed by Blau-Duncan (1967) and Sewell and others. From a replication standpoint, this implies that the processes underlying early attainment posited in these studies can be generalized to other groups and populations. Of special interest here is the mediating or indirect influences of social psychological variables during adolescence. Our findings closely parallel those reported for Wisconsin males (Sewell, et al., 1970) and the EEO data (Alexander and Eckland, 1974). That is, the formation of adolescent attitudes were important mediating influences immediately antecedent to adult status attainment.

One interpretation of the structure of status attainment models is that they posit a network which explains the mechanism through which parental statuses are transmitted to their children when their children become adults. In the Southern Youth data, 88% of the effects of SES on educational attainment were found to be mediated by the five intervening variables (SOI, SIB, WKVAL, LOA8, LEA8). The two status aspiration variables, LOA8 and LEA8, appeared to be the most important intervening influences; 82% of the effects of SES ultimately involved the formation of these attitudes.

Again paralleling previous status attainment research, the formation of attitudes was found to be associated with the antecedent influences of social origins and significant other encouragement. In addition, our model indicates that sibling number also plays a role in the development of attitudes. That is, youth from large families, even when parental SES was controlled, tended to develop lower level educational aspirations. SOI was found to be a less important mediating influence than had been observed in the Wisconsin data in that it mediated only a small portion of the effects of SES on attitude formation. The interpretation of this smaller effect is problematic since the SOI measurement in the Wisconsin model and the present model substantially differ.

FOOTNOTES

1. Paper presented at the Rural Sociology Section of SAAS meetings in Mobile, Alabama, 1976. Development of this paper was sponsored by the Texas Agricultural Experiment Station as a contribution to TAES project H-2817 and CSRS Regional Research Project S-81, "Development of Human Resource Potentials of Rural Youth in the South and Their Patterns of Mobility." The authors wish to express their appreciation to Wayne L. Byrd for his comments regarding this paper and to Sharon Hazelton for her assistance in its preparation.

2. These studies generally examine the number of siblings as a covariate with birth order of the respondent. Similarly, other studies look at the effect of family size upon aspirations and attainments (Elder and Bowerman, 1963; Kennett and Cropley, 1970).

3. Blau and Duncan (1967) use this procedure of determining the percentage of the total sum of squares accounted for by a given variable or combination of variables. This procedure ascertains the effect contribution of the interaction of sibling number and birth order upon attainments.

4. Sewell and Hauser (1972) used a weighted index for parental socioeconomic status. The index is composed of father's education, mother's education, parental income, and father's occupation.

5. Socioeconomic and/or class differences are reified within, as well as among, schools by students' peer group participation, their differential participation in extracurricular activities, and by tracking, compensatory education and other such programs (Bowles, 1974; Jencks, et al., 1972; Graubard, 1972; Greer, 1974; Karabel, 1974).

6. C. White (1974) discusses in more depth than here the literature surrounding social mobility and fertility.

7. The mechanism by which significant others affect ego may vary (Picou et al., 1974). Significant others may serve as role model, define expectations for ego, or support either positively or negatively ego's behavior.

8. SIB and WKVAL orderings are inverted for path analysis. Thus, high SIB or WKVAL would have value of "1" and a low value of "7". This maintains directionality among variable relationships suggested in the literature. Their means and standard deviations are reported in Table 2 according to the original orderings.

9. Although a number of studies use a bi-dimensional distinction of education aspirations (Kuvlesky and Ohlendorf, 1968; and over fifty others listed in annotations by Cosby et al., 1973), in this study a uni-dimensional conceptualization that approximates Woelfel and Haller's (1971) level of educational aspiration scale is utilized. This scale is an extension of the logic used by Haller, et al., (1974) when developing their treatise on the "level of occupational aspirations" (LOA). These researchers viewed LOA as "a general dimension composed of idealistic-realistic goal-region aspects and of short and long-term temporal aspects." This conceptualization, consequently, de-emphasizes the bi-dimensionality of idealistic (aspirational) and realistic (expectational) distinctions of LOA in favor of a more composite, uni-dimensional approach (Cosby, Ohlendorf, and Falk, 1974). However, Falk (1975) has cautioned that aspirations, like other attitudes, may be uni-dimensional, bi-dimensional, or multi-dimensional.

10. The sample proper of which this study sample is a part includes panel respondents also from Louisiana, Mississippi and South Carolina. The race-sex breakdown of the total sample is: white males--432; white females--292; black males--268; black females--236.

TABLE 1: DISAGGREGATED VARIABLES, MISSING DATA, MEANS AND STANDARD DEVIATIONS.

Variables	N	Missing N	Mean	S.D.
SES				
Fed	209	12	4.297	1.754
Med	214	7	4.664	1.507
Boc	207	14	32.623	22.498
SIB	218	3	2.651	1.900
SOI				
Far	218	3	3.220	.807
Frd	215	6	2.456	.879
Cou	209	12	1.751	.998
Tea	210	11	2.314	1.056
Rel	210	11	2.419	1.000
Ocas6	216	5	53.838	26.096
WKVAL				
Ocval	219	2	2.402	1.261
Edval	219	2	2.804	2.112
LOAB				
Ocas8	212	9	58.108	24.276
Ocex8	192	29	52.766	27.684
LEAB				
Edas8	221	0	4.390	1.372
Edex8	221	0	3.932	1.342
EDAT	218	3	3.674	2.402

TABLE 2: ZERO-ORDER CORRELATION COEFFICIENTS, MEANS AND STANDARD DEVIATIONS AND COEFFICIENTS OF DETERMINATION FOR WHITE MALES AFTER MISSING DATA PROCEDURE

	SES	SIB	SOI	WKVAL	LOAB	LEAB	EDAT
SES	- -	.246**	.177**	.133*	.369**	.461**	.298**
SIB		- -	.132*	.048	.229**	.305**	.193**
SOI			- -	.134*	.425**	.389**	.305**
WKVAL				- -	.034	.085	.095
LOAB					-	.672**	.512**
LEAB						- -	.543**
EDAT							- -
$\bar{X}$	-.014	2.650	6.267	2.606	55.245	4.156	3.249
S.D.	.810	1.889	1.634	1.116	22.747	1.282	1.387
R^2	- -	.061	.039	.030	.282	.339	.341

*P < .05 for Ho: Rho = 0

**P < .01 for Ho: Rho = 0

Table 3: DECOMPOSITION OF SES EFFECTS ON EDAT

INDIRECT EFFECTS OF SES ON EDAT[a]	AMOUNT
SES X SIB	.0047
SES X SIB X SOI	.0014
SES X SIB X SOI X WKVAL	.0001
SES X SIB X SOI X WKVAL X LOAB	-.0000
SES X SIB X SOI X WKVAL X LEAB	-.0000
SES X SIB X WKVAL	.0000
SES X SIB X WKVAL X LOAB	-.0000
SES X SIB X WKVAL X LEAB	-.0000
SES X SIB X SOI X LOAB	.0021
SES X SIB X SOI X LEAB	.0023
SES X SIB X LOAB	.0068
SES X SIB X LEAB	.0143
SES X SOI	.0090
SES X SOI X WKVAL	.0006
SES X SOI X WKVAL X LOAB	-.0000
SES X SOI X WKVAL X LEAB	-.0001
SES X SOI X LOAB	.0137
SES X SOI X LEAB	.0153
SES X WKVAL	.0037
SES X WKVAL X LOAB	-.0002
SES X WKVAL X LEAB	-.0005
SES X LOAB	.0684
SES X LEAB	.1208
TOTAL	.2624

PARTITIONING THE DIRECT AND INDIRECT EFFECTS

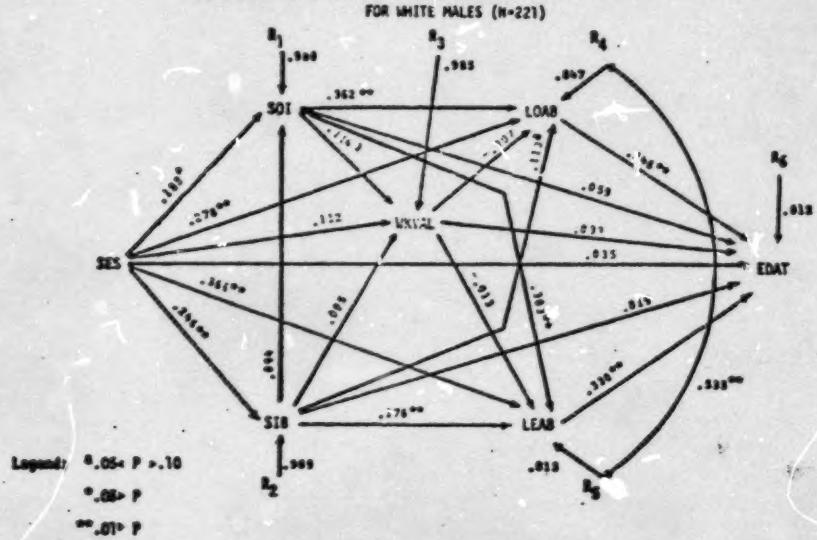
Total zero-order Correlation	Direct Effect	Indirect Effects Thru[c] SIB	SOI	WKVAL	LOAB	LEAB
.2974[b] =	.0350	+ .0047	+ .0104	+ .0044	+ .0938	+ .1521
Percent Contribution						
100% =	11.77	+ 1.58	+ 3.50	+ 1.48	+ 30.53	+ 51.14

[a]Indirect effects are the products of the respective standardized betas. For example, .0047 is the product of the paths from SES (.246) → SIB (.019) → EDAT.

[b]The actual zero-order correlational coefficient is .2980. Difference is due to rounding error.

[c]The indirect effect of each variable is determined by summating the amount(s) of influence where that variable is ultimately involved. For example, all multiplicative chains ending in SOI (.0014 + .0090) are added.

FIGURE 1: PATH DIAGRAM WITH STANDARDIZED COEFFICIENTS FOR WHITE MALES (N=221)



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